P. Rosengrave, H. Taylor, R. Montgomerie,

M.A. Cline, A.Y. Kuo, M.L. Smith, W. Nandar,

V. Metcalf, K. McBride and N.J. Gemmell

B.C. Prall, P.B. Siegel and D.M. Denbow



CONTENTS OF VOLUME 152

Vol. 152A. No. 1

Appreciation list In Appreciation Review S. St-Cyr and N. Aubin-Horth Integrative and genomics approaches to uncover the mechanistic bases of fish behavior and its diversity General papers **B.K. McNab** Ecological factors affect the level and scaling of avian BMR 22 D.W. DesRochers, J.M. Reed, J. Awerman, Exogenous and endogenous corticosterone alter feather quality 46 J.A. Kluge, J. Wilkinson, L.I. van Griethuijsen, J. Aman and L.M. Romero B.T.A. Muyssen, K.A.C. De Schamphelaere and 53 Calcium accumulation and regulation in Daphnia magna: Links with feeding, C.R. Janssen growth and reproduction K.A. Hyndman and D.H. Evans Effects of environmental salinity on gill endothelin receptor expression in the 58 killifish, Fundulus heteroclitus R. Leelatanawit, K. Sittikankeaw, P. Yocawibun, 66 Identification, characterization and expression of sex-related genes in testes of S. Klinbunga, S. Roytrakul, T. Aoki, I. Hirono the giant tiger shrimp Penaeus monodon and P. Menasveta Y. Nikaido, S. Ueda and A. Takemura Photic and circadian regulation of melatonin production in the Mozambique tilapia Oreochromis mossambicus S.M. Rankin, V.A. TeBrugge, J.A. Murray, 83 Effects of selected neuropeptides, mating status and castration on male A.M. Schuler and S.S. Tobe reproductive tract movements and immunolocalization of neuropeptides in earwigs J.P. Woolfson and J.J. Heikkila Examination of cadmium-induced expression of the small heat shock protein 91 gene, hsp30, in Xenopus laevis A6 kidney epithelial cells M.T. Butcher, J.W. Hermanson, N.G. Ducharme, Contractile behavior of the forelimb digital flexors during steady-state locomotion 100 L.M. Mitchell, L.V. Soderholm and J.E.A. Bertram in horses (Equus caballus): An initial test of muscle architectural hypotheses about in vivo function M.M. Page, C.W. Peters, J.F. Staples and 115 Intracellular antioxidant enzymes are not globally upregulated during hibernation J.A. Stuart in the major oxidative tissues of the 13-lined ground squirrel Spermophilus tridecemlineatus

123

130

Chemical composition of seminal and ovarian fluids of chinook salmon

Differential feed intake responses to central corticotrophin releasing factor in

(Oncorhynchus tshawytscha) and their effects on sperm motility traits

lines of chickens divergently selected for low or high body weight

Vol. 152A. No. 2

Reviews

D.M. García and J.R. Koke

T. Nakatsuji, C.-Y. Lee and R.D. Watson

- 135 Astrocytes as gate-keepers in optic nerve regeneration A mini-review
- 139 Crustacean molt-inhibiting hormone: Structure, function, and cellular mode of action

General papers

M. Patel, F.I. Iftikar, R.W. Smith, Y.K. Ip and C.M. Wood

Y. Uemura, S. Takahashi, A. Senda, K. Fukuda, T. Saito, O.T. Oftedal and T. Urashima

J.R. Rasmussen, R.M.G. Wells, K. Henty, T.D. Clark and T. Brittain

C. Oliveira, L.M. Vera, J.F. López-Olmeda, J.M. Guzmán, E. Mañanós, J. Ramos and F.J. Sánchez-Vázquez

J.F. Masello, R.G. Choconi, M. Helmer, T. Kremberg, T. Lubjuhn and P. Quillfeldt

A.C.I. Kiss, J.E. de Carvalho, C.A. Navas and F.R. Gomes

A. Naimi, A.-S. Martinez, M.-L. Specq, A. Mrac, B. Diss, M. Mathieu and P. Sourdaine

L.G. Halsey, E.L.C. Shepard, F. Quintana, A. Gomez Laich, J.A. Green and R.P. Wilson

T.J. Benfey and L.E. Bennett

M. Kim, I.-Y. Ahn, J. Cheon and H. Park

H.-L. Lu, R.-B. Hu and X. Ji

T. Ikegami, K. Azuma, M. Nakamura, N. Suzuki, A. Hattori and H. Ando

S. Pongsomboon, S. Udomlertpreecha, P. Amparyup, S. Wuthisuthimethavee and A. Tassanakajon

A.-L. Meistertzheim, M. Lejart, N. Le Goïc and M.-T. Thébault

M.C. Ojimi, N. Isomura and M. Hidaka

A. Servili, M.R. Bufalino, R. Nishikawa, I.S. de Meio, J.A. Muñoz-Cueto and L.E.J. Lee

V. da Silveira Ramos, M.G.M. Freire, J.R.P. Parra and M.L.R. Macedo

E.M. Dzialowski, W.L. Reed and P.R. Sotherland

J.P. Breves, P.A. Veillette and J.L. Specker

149 Water balance and renal function in two species of African lungfish Protopterus dolloi and Protopterus annectens

158 Chemical characterization of milk oligosaccharides of a spotted hyena (Crocuta crocuta)

162 Characterization of the hemoglobins of the Australian lungfish Neoceratodus forsteri (Krefft)

168 Monthly day/night changes and seasonal daily rhythms of sexual steroids in Senegal sole (Solea senegalensis) under natural fluctuating or controlled environmental conditions

176 Do leucocytes reflect condition in nestling burrowing parrots Cyanoliseus patagonus in the wild?

182 Seasonal metabolic changes in a year-round reproductively active subtropical tree-frog (Hypsiboas prasinus)

189 Identification and expression of a factor of the DM family in the oyster Crassostrea gigas

197 The relationship between oxygen consumption and body acceleration in a range of species

203 Effect of temperature on heart rate in diploid and triploid brook charr, Salvelinus fontinalis, emb. yos and larvae

207 Molecular cloning and thermal stress-induced expression of a pi-class glutathione S-transferase (GST) in the Antarctic bivalve Laternula elliptica

214 Embryonic growth and mobilization of energy and material during incubation in the checkered keelback snake, Xenochrophis piscator

219 Diurnal expressions of four subtypes of melatonin receptor genes in the optic tectum and retina of goldfish

225 Gene expression and activity of carbonic anhydrase in salinity stressed *Penaeus monodon*

234 Sex-, gametogenesis, and tidal height-related differences in levels of HSP70 and metallothioneins in the Pacific oyster *Crassostrea gigas*

240 Telomerase activity is not related to life history stage in the jellyfish Cassiopea sp.

245 Establishment of long term cultures of neural stem cells from adult sea bass, Dicentrarchus labrax

255 Regulatory effects of an inhibitor from Plathymenia foliolosa seeds on the larval development of Anagasta kuehniella (Lepidoptera)

262 Effects of egg size on Double-crested Cormorant (Phalacrocorax auritus) egg composition and hatchling phenotype

268 Ghrelin in the summer flounder: Immunolocalization to the gastric glands and action on plasma cortisol levels J.M. Mulvey and G.M.C. Renshaw GABA is not elevated during neuroprotective neuronal depression in the hypoxic epaulette shark (Hemiscyllium ocellatum) R. Bettencourt, P. Dando, P. Collins, 278 Innate immunity in the deep sea hydrothermal vent mussel Bathymodiolus V. Costa, B. Allam and R. Serrão Santos azoricus Vol. 152A, No. 3 **Editorial** P.J. Walsh, T.P. Mommsen and G.E. Nilsson The do's and don't's of submitting scientific papers 291 General papers D. Ojima and M. Iwata 293 Central administration of growth hormone-releasing hormone triggers downstream movement and schooling behavior of chum salmon (Oncorhynchus keta) fry in an artificial stream J. Pawlak, M. Golab, M. Markowska, P. Majewski Photoperiod-related changes in hormonal and immune status of male Siberian and K. Skwarlo-Sonta hamsters, Phodopus sungorus T.M. Kortner, E. Rocha and A. Arukwe 304 Previtellogenic oocyte growth and transcriptional changes of steroidogenic enzyme genes in immature female Atlantic cod (Gadus morhua L.) after exposure to the androgens 11-ketotestosterone and testosterone A. Pérez-Jiménez, M.C. Hidalgo, A.E. Morales, Use of different combinations of macronutrients in diets for dentex (Dentex dentex): 314 M. Arizcun, E. Abellán and G. Cardenete Effects on intermediary metabolism Diet and habitat aridity affect osmoregulatory physiology: An intraspecific P. Sabat, S. Gonzalez-Vejares and K. Maldonado 322 field study along environmental gradients in the Rufous-collared sparrow A. Chattoraj, M. Seth and S.K. Maitra Localization and dynamics of Mel_{1a} melatonin receptor in the ovary of carp Catla catla in relation to serum melatonin levels L.G. Fick, T.A. Kucio, A. Fuller, A. Matthee and The relative roles of the parasol-like tail and burrow shuttling in thermoregulation of 334 D. Mitchell free-ranging Cape ground squirrels, Xerus inauris H.G. Ochoa-Acuña, B.K. McNab and E.H. Miller 341 Seasonal energetics of northern phocid seals F.B. Jensen, C. Agnisola and I. Novak 351 ATP release and extracellular nucleotidase activity in erythrocytes and coronary circulation of rainbow trout V.S. Elbrønd, G. Laverty, V. Dantzer, C. Grøndahl 357 Ultrastructure and electrolyte transport of the epithelium of coprodeum, colon and and E. Skadhauge the proctodeal diverticulum of Rhea americana C. De Martinez Gaspar Martins and A. Bianchini Metallothionein-like proteins in the blue crab Callinectes sapidus: Effect of water 366 salinity and ions Effects of salinity on rates of protein synthesis and oxygen uptake in the post-I. Intanai, E.W. Taylor and N.M. Whiteley 372 larvae and juveniles of the tropical prawn Macrobrachium rosenbergii (de Man) R.S. Hetem, B.A. de Witt, L.G. Fick, A. Fuller, 379 Body temperature, thermoregulatory behaviour and pelt characteristics of three G.I.H. Kerley, L.C.R. Meyer, D. Mitchell and colour morphs of springbok (Antidorcas marsupialis) S.K. Maloney D.J. Conklin, H.B. Lillywhite, B. Bishop, Rhythmic contractility in the hepatic portal "corkscrew" vein of the rat snake 389 A.R. Hargens and K.R. Olson M. Clauss, J. Fritz, D. Bayer, K. Nygren, 398 Physical characteristics of rumen contents in four large ruminants of different S. Hammer, J.-M. Hatt, K.-H. Südekum feeding type, the addax (Addax nasomaculatus), bison (Bison bison), red deer (Cervus and J. Hummel elaphus) and moose (Alces alces) S. Medler and K. Hulme 407 Frequency-dependent power output and skeletal muscle design A. Marino, R. Morabito and G. La Spada 418 Factors altering the haemolytic power of crude venom from Aiptasia mutabilis

(Anthozoa) nematocysts

Contents of volume

A. Villegas and J.M. Sánchez-Guzmán

K.P. Maruska, W.J. Korzan and A.F. Mensinger

S.A. Morley, G.J. Lurman, J.N. Skepper, HO. Pörtner and L.S. Peck	423	Thermal plasticity of mitochondria: A latitudinal comparison between Southern Ocean molluscs
N.M. Belli, R.O. Faleiros, K.C.S. Firmino, D.C. Masui, F.A. Leone, J.C. McNamara and R.P.M. Furriel	431	Na,K-ATPase activity and epithelial interfaces in gills of the freshwater shrimp <i>Macrobrachium amazonicum</i> (Decapoda, Palaemonidae)
C.M.A. Caipang, I. Hirono and T. Aoki	440	Modulation of the early immune response against viruses by a teleostean interferon regulatory factor-1 (IRF-1) $$
		Vol. 152A, No. 4
Reviews		
A. Bar	447	Calcium transport in strongly calcifying laying birds: Mechanisms and regulation
J.A. Covi, E.S. Chang and D.L. Mykles	470	Conserved role of cyclic nucleotides in the regulation of ecdysteroidogenesis by the crustacean molting gland
General papers		
J.D. Overton, G.S. Adams, R.D. McCall and S.T. Kinsey	478	High energy phosphate concentrations and AMPK phosphorylation in skeletal muscle from mice with inherited differences in hypoxic exercise tolerance
J.F. López-Olmeda, C. Oliveira, H. Kalamarz, E. Kulczykowska, M.J. Delgado and F.J. Sánchez-Vázquez	486	Effects of water salinity on melatonin levels in plasma and peripheral tissues and on melatonin binding sites in European sea bass (<i>Dicentrarchus labrax</i>)
A. Hamard, B. Sève and N. Le Floc'h	491	A moderate threonine deficiency differently affects protein metabolism in tissues of early-weaned piglets
Z. Li, B. Cao, B. Zhao, X. Yang, M.Z. Fan and J. Yang	498	Decreased expression of calpain and calpastatin mRNA during development is highly correlated with muscle protein accumulation in neonatal pigs
A. Schwarm, S. Ortmann, C. Wolf, W.J. Streich and M. Clauss	504	More efficient mastication allows increasing intake without compromising digestibility or necessitating a larger gut: Comparative feeding trials in banteng (Bos javanicus) and pygmy hippopotamus (Hexaprotodon liberiensis)
R.S. Katersky and C.G. Carter	513	Growth and protein synthesis of barramundi, $\it Lates\ calcarifer$, fed lupin as a partial protein replacement
J.B. Benoit, G. Lopez-Martinez, M.A. Elnitsky, R.E. Lee Jr. and D.L. Denlinger	518	Dehydration-induced cross tolerance of <i>Belgica antarctica</i> larvae to cold and heat is facilitated by trehalose accumulation
T. Jeanniard du Dot, D.A.S. Rosen, J.P. Richmond, A.S. Kitaysky, S.A. Zinn and A.W. Trites	524	Changes in glucocorticoids, IGF-I and thyroid hormones as indicators of nutritional stress and subsequent refeeding in Steller sea lions (Eumetopias jubatus)
V. Visudtiphole, S. Klinbunga and K. Kirtikara	535	Molecular characterization and expression profiles of cyclin A and cyclin B during ovarian development of the giant tiger shrimp Penaeus monodon
PJ. Wang, CH. Lin, LY. Hwang, CL. Huang, TH. Lee and PP. Hwang	544	Differential responses in gills of euryhaline tilapia, <i>Oreochromis mossambicus</i> , to various hyperosmotic shocks
l. Geurden, F. Jutfelt, RE. Olsen and K.S. Sundell	552	A vegetable oil feeding history affects digestibility and intestinal fatty acid uptake in juvenile rainbow trout <i>Oncorhynchus mykiss</i>
F. Bozinovic, J.M. Rojas, B.R. Broitman and R.A. Vásquez	560	Basal metabolism is correlated with habitat productivity among populations of degus ($Octodon\ degus$)
F. Santiago-Quesada, J.A. Masero, N. Albano, A. Villegas and I.M. Sánchez-Guzmán	565	Sex differences in digestive traits in sexually size-dimorphic birds: Insights from an assimilation efficiency experiment on Black-tailed Godwit

an assimilation efficiency experiment on Black-tailed Godwit

Individual, temporal, and population-level variations in circulating 11-ketotestosterone and 17β -estradiol concentrations in the oyster toadfish *Opsanus*

- C.-W. Chu, T.-S. Tsai, I.-H. Tsai, Y.-S. Lin and M.-C. Tu
- I. Pirozzi and M.A. Booth
- C. Lindsay, C. Downs and M. Brown
- N. Martin, E. Kraffe and H. Guderley
- A. Mujahid and M. Furuse

- 579 Prey envenomation does not improve digestive performance in Taiwanese pit vipers (Trimeresurus gracilis and T. stejnegeri stejnegeri)
- The routine metabolic rate of mulloway (Argyrosomus japonicus: Sciaenidae) and yellowtail kingfish (Seriola lalandi: Carangidae) acclimated to six different temperatures
- 593 Physiological variation in Amethyst Sunbirds (Chalcomitra amethystina) over an altitudinal gradient: A seasonal comparison
- 599 Effect of day length on oxidative capacities of mitochondria from red muscle of rainbow trout (Oncorhynchus mykiss)
- 604 Oxidative damage in different tissues of neonatal chicks exposed to low environmental temperature
 - I Contents of Volume 152
 - VI Subject Index
 - IX Author Index

SUBJECT INDEX

Vol. 152A, Nos. 1-4

Accelerometry, 197 Accumulation, 53 Aerobic capacity, 182 Aiptasia mutabilis, 418 Allatostatin, 83 Allometry, 262 Alternative reproductive tactics, 9 Altitudinal variation, 593 Amethyst Sunbird, 593 **AMPK. 478** Anagasta kuehniella, 255 Androgen, 569 Androgens, 304 Animal behaviour, 379 Annual rhythm, 168 Antarctic, 207 Antarctica, 423, 518 Antelope, 379 Antioxidant enzymes, 115 Anura, 182 Aridity, 322 Asian pit vipers, 579 Asian sea bass, 513 Assimilation efficiency, 565 Astrocytes, 135 Atlantic cod, 304 ATP, 478 ATP release, 351 ATP signaling, 351 ATPase, 447 Avian colon, 357 Avian flight, 22

Bacillus subtilis, 278 Barramundi, 513 Bathymodiolus azoricus, 278 Behavior, 9 Behaviour, 334 Birds, 46 Bivalve, 278 Black-tailed Godwit, 565 **BMR. 341** Body composition, 341 Body condition, 176 Body temperature, 334 Bohr effect, 162 Brain, 115, 219, 604 Brain cell culture, 245 Burrow, 334 Bursa of Fabricius, 357

Cadmium chloride, 91 Calbindin, 447 Calcium, 53, 278, 366, 447

Callinectes sapidus, 366

Calpain, 498 Calpastatin, 498 **cAMP**, 470 Cannulation, 77

Carbonic anhydrase, 225, 447

Cardiac output, 203 Carnivora, 158 Carp. 327 Cassiopea, 240 Catalase, 115

Cellular immunity, 278

cGMP, 470 Charr, 203 Chick, 130 Chinook salmon, 123 Cholesterol uptake, 470 Chum salmon, 293 Circadian, 77 Clearance ratio, 149 Cnidaria, 240

Cold. 518 Cold adaptation, 579 Cold stress, 604 Colubridae, 214 Common dentex, 314 Computational model, 407 Computer-assisted sperm analysis (CASA), 123

Confocal microscopy, 91 Congeners, 423

Conversion efficiency, 214 Coprodeum, 357 Corticosterone, 46 Cortisol, 268

Crassostrea gigas, 189, 234

CRF. 130 Cristae, 423 Cross tolerance, 518 Crude venom, 418

Crustacean hyperglycemic hormone, 470 Crustacean hyperglycemic hormone family, 139

Cryptic female choice, 123

CuZnSOD, 115 Cyclin A, 535 Cyclin B, 535 Cyclophilin, 66

Daphnia magna, 53 Data logger, 334

Day/night concentrations, 168 DD-PCR, 225

Desiccation rates, 518 Development, 262 Dicentrarchus labrax, 486 Diffusive permeability, 149 Digestive efficiency, 579

Digestive traits, 565 Digital flexors, 100 Diurnal rhythm, 219 Dmrt1, 189 Dmrt4, 189 Dmrt5, 189

E-NTPDase, 351

Downstream migration, 293

Earwigs, 83 Ecdysteroid, 139 Ecdysteroids, 470 Ecological factors, 22 Ectonucleotidase activity, 351 Egg, 214 Eggs, 262 Eggshell gland, 447 Elastic energy, 100 Embryonic growth, 214 Emu, 357 Endothelin, 58 Endothelin receptor, 58 Energetics, 22, 197, 341, 478, 560 Environmental control, 599

Epithelial calcium channels, 447 Erythrocyte, 351 EST. 66 17β-estradiol, 168 Estrogen, 569 Euryhaline teleost, 544

Exercise, 478 Extracellular ATP, 351 Eyestalk ablation, 535

Fasting, 341 Feather quality, 46 Feathers, 46 Feeding, 149 Fish, 9, 135, 327 Fish cell line, 245 Fish muscle, 599 Fish oil substitution, 552 Flounder, 268 Food, 53 Food habit hypothesis, 560 Food habits, 341 Food intake, 130 Foregut fermentation, 504 Free radicals, 299

GABA, 273 Gene expression, 9, 58, 91 Genomics, 9

Frequency, 407

Geographic comparisons, 423 Geography, 22 Ghrelin, 268 GHRH. 293 Gill. 58, 544 Gill epithelial interfaces, 431 Gill Na,K-ATPase kinetics, 431 Gill ultrastructure, 431 Gills, 366 Glia, 135 Glucocorticoids, 524 Goldfish, 219 Gonad, 234 Gonadal hormones, 447 Gravity, 389 Growth efficiency, 513

¹H NMR spectrometry, 158 Haematology, 176 Haemolysis, 418 Hatchling, 214 Heart, 115, 604 Heart rate, 203 Heat, 518 Heat shock protein, 91 Heat shock proteins, 234 Heat transfer, 379 Hemocyte, 278 Hemoglobin, 162 Hepatopancreas, 366 Herbivore, 504 Hibernation, 115 Histology, 304 H/L ratio, 176 Hormonal regulation, 524 Hormone, 569 Horse, 100 Hyaenidae, 158 Hydrothermal, 278 Hyena, 158 Hyperphagia, 130 Hypo-osmotic stress, 366 Hypophagia, 130 Hypothermia, 604 Hypoxia, 273, 478 Hypoxic preconditioning, 273

IGF-I, 524 Immune response, 440 Immunochemistry, 83 Immunohistochemistry, 268 Immunology, 176 In vitro fatty acid absorption, 552 Incubation, 214 Individual variation, 569 Inflammation, 299 Ingestion, 53 Innate immunity, 176 Interferon regulatory factor-1, 440 Intermediary metabolism, 314 Interpopulational/Intraspecific physiological variability, 560 Intestinal integrity, 552

Intestine, 447, 491 Intracellular signaling, 278 Ion transport, 58 Ionic composition, 123 Ischaemia, 273

Japanese flounder, 440 Jellyfish, 240 Juveniles, 372

K-phosphatase activity, 431 Kidney, 322 Killifish, 58 11-KT, 569

Laternula elliptica, 207, 423 Lates calcarifer, 513 Lepidoptera, 255 Leucocyte counts, 176 Life history, 262 Life span, 240 Light responsiveness, 77 Liver, 491 Locomotion, 407 Lungfish, 162 Lupinus angustifolius, 513

Macrobrachium amazonicum, 431 Macrobrachium rosenbergii, 372 Macronutrients, 314 Mammalian flight, 22 Mammals, 135 MAPKs, 278 Mariculture, 569 Marine ectotherms, 423 Marine environment, 341 Maternal effect, 262 Maturation stage, 234 MDA, 604 Mean retention time, 504 Medusa, 240 Mel_{1a} melatonin receptor (Mel_{1a}R), 327 Melatonin, 77, 299, 327, 486 Melatonin binding sites, 486 Melatonin receptor, 219 Metabolic depression, 273 Metabolic enzymes, 182 Metabolic rate, 203 Metabolic rates, 593 Metabolism, 586 Metallothioneins, 234, 366 Microarray, 9 Midge, 518 Migration, 22 MIH, 139 Milk oligosaccharide, 158 Mitochondrial density, 423 Mitochondrion-rich cells, 544 MnSOD, 115 Molecular chaperone, 91

Molting, 139 Molting gland, 470 Moonlight, 77 Mouse, 478 mRNA, 91 Muscle, 478, 491 Muscle work, 100 Mytilin, 278

Na*/K*-ATPase, 544 Nacella concinna, 423 Negative rheotaxis, 293 Nematocysts, 418 Neonatal chick, 604 Neonatal pigs, 498 Neural stem cells, 245 Neuroprotection, 273 Non-passerines, 22 Nutritional indices, 255 Nutritional stress, 524

Octodon degus (Rodentia, Octodontidae), 560 ODBA, 197 Oncorhynchus keta, 293 Open-top respirometry, 586 Ophthalmectomy, 77 Optic nerve lesion and regeneration (ONR), 135 Optic tectum, 219 Osmolality, 544 Osmoregulation, 225, 322, 357 Osmotic permeability, 149 Ostrich, 357 Ovarian development, 535 Ovarian fluid, 123 Ovary, 327 Oxidative stress resistance, 115 Oxygen affinity, 162 Oxygen consumption, 182, 197, 372, 586 Oxygen transfer, 586 Oyster, 189

P. monodon, 225 Pagophilus, 341 Paracellular, 447 Paralichthys dentatus, 268 Paralichthys olivaceus, 440 Particle retention, 398 Particle size, 398, 504 Passage time, 579 Passerines, 22, 322 Patagonian Conure, 176 PCNA. 245 Pelt, 379 Penaeus monodon, 535 Peritoneal leukocytes, 299 Phagocytosis, 278 Phenotypic flexibility, 593 Phenotypic plasticity, 599 Phoca, 341 Phosphocreatine, 478 Phosphodiesterase, 139 Phylogeny, 22

Molt-inhibiting hormone, 139, 470

Molt, 46

Subject Index

Physiology, 53 Pi class glutathione S-transferases, 207 Pig. 491 Pineal gland, 77 Pinnipedia, 341 Plant oils, 552 Plasma metabolites, 314 Plathymenia foliolosa, 255 Polyp, 240 Post-larvae, 372 Power output, 407 Prawn, 372 Previtellogenic oocytes, 304 Proctolin, 83 Protein, 46 Protein deposition, 498 Protein metabolism, 491 Protein synthesis, 372, 470, 513 Psittaciformes, 176 Pump, 447

Q₁₀, 203 Quantitative real-time PCR, 9

Pusa, 341

RACE-PCR, 66 Ratites, 357 Recombinant GST, 207 Red blood cells, 351 Regeneration, 135 Regulation, 53 Reproduction, 234 Reproductive cycle, 327 Reproductive endocrinology, 304 Reproductive tract motility, 83 Reptilia, 214 Resonance, 407 Respirometry, 197 Retina, 219 Rice seeds, 565 ROS, 115 Routine metabolic rate, 586 RT-PCR, 66

Rumen physiology, 398 Ruminant, 504

Salinity, 366, 372, 486

Salinity acclimation, 431

Salinity stress, 225 Salmonid fish, 552 Scaling, 262 Schooling behavior, 293 SDA, 579 Sea bass, 245 Sea lion, 524 Seasonal acclimatisation, 599 Seasonal acclimatization, 593 Seasonal daily rhythms, 168 Seasonality, 182, 341, 486 Seminal fluid, 123 Sex. 234 Sex determination, 189 Sexual dimorphism, 565 Sexual steroids, 168 Shorebirds, 565 Short circuit current, 357 Siberian hamster, 299 Skeletal muscle, 407, 498 Snake, 389 Social dominance, 9 Solea senegalensis female, 168 Sox 2, 245 Sperm motility traits, 123 Squirrel, 334 Steroid cycling, 569 Steroid hormones, 299 Strain, 100 Stratification, 398 Stress, 46, 100 Stroke, 273

Tail, 334 Teleost, 245, 569 Telomerase, 240

SUMO-1. 66

α-subunit expression, 431

Telomere, 240 Temperature, 168, 182, 203, 372, 586 Terrestrialization, 149 Testes, 66 Testosterone, 168 Thermal acclimation, 599 Thermal stress, 207 Thermoregulation, 379 Thermotolerance, 91 Threonine, 491 Thyroid, 524 Tilapia, 77, 544 Tissue composition, 314 Toxicity, 255 Tra-2, 66 Transcellular, 447 Transepithelial resistance, 552 Transfection, 245 Transport, 447 Traumatic brain injury, 273 Treadmill, 197 Triploidy, 203 Trout, 203 Trypsin inhibitor, 255

Urine, 322 Ussing chamber, 552 Uterus, 447

Validation, 197 Vascular smooth muscle, 389 Vasomotion, 389 Vein, 389 Venous return, 389 Vibrio sp., 278 Viscosity, 123, 398 Vitamin D, 447

Xenochrophis piscator, 214

Y-organ, 139, 470

AUTHOR INDEX

Vol. 152A, Nos. 1-4

Abellán, E., 314	
Adams, G.S., 478	
Agnisola, C., 351	
Ahn, IY., 207	
Albano, N., 565	
Allam, B., 278	
Aman, J., 46	
Amparyup, P., 225	
Ando, H., 219	
Aoki, T., 66, 440	
Arizcun, M., 314	
Arukwe, A., 304	
Aubin-Horth, N., 9	
Awerman, J., 46	
Azuma, K., 219	

Bar, A., 447 Bayer, D., 398 Belli, N.M., 431 Benfey, T.J., 203 Bennett, L.E., 203 Benoit, J.B., 518 Bertram, J.E.A., 100 Bettencourt, R., 278 Bianchini, A., 366 Bishop, B., 389 Booth, M.A., 586 Bozinovic, F., 560 Breves, J.P., 268 Brittain, T., 162 Broitman, B.R., 560 Brown, M., 593 Bufalino, M.R., 245 Butcher, M.T., 100

Caipang, C.M.A., 440 Cao, B., 498 Cardenete, G., 314 Carter, C.G., 513 Chang, E.S., 470 Chattoraj, A., 327 Cheon, I., 207 Choconi, R.G., 176 Chu, C.-W., 579 Clark, T.D., 162 Clauss, M., 398, 504 Cline, M.A., 130 Collins, P., 278 Conklin, D.J., 389 Costa, V., 278 Covi, J.A., 470

da Silveira Ramos, V., 255 Dando, P., 278 Dantzer, V., 357
de Carvalho, J.E., 182
De Martinez Gaspar Martins, C., 366
de Melo, I.S., 245
De Schamphelaere, K.A.C., 53
de Witt, B.A., 379
Delgado, M.J., 486
Denbow, D.M., 130
Denlinger, D.L., 518
DesRochers, D.W., 46
Diss, B., 189
Downs, C., 593
Ducharme, N.G., 100
Dzialowski, E.M., 262

Elbrønd, V.S., 357 Elnitsky, M.A., 518 Evans, D.H., 58

Faleiros, R.O., 431 Fan, M.Z., 498 Fick, L.G., 334, 379 Firmino, K.C.S., 431 Freire, M.G.M., 255 Fritz, J., 398 Fukuda, K., 158 Fuller, A., 334, 379 Furriel, R.P.M., 431 Furuse, M., 604

García, D.M., 135 Gemmell, N.J., 123 Geurden, I., 552 Golab, M., 299 Gomes, F.R., 182 Gomez Laich, A., 197 Gonzalez-Vejares, S., 322 Green, J.A., 197 Grøndahl, C., 357 Guderley, H., 599 Guzmán, J.M., 168

Halsey, L.G., 197 Hamard, A., 491 Hammer, S., 398 Hargens, A.R., 389 Hattori, A., 219 Heikkila, J.J., 91 Helmer, M., 176 Henty, K., 162 Hermanson, J.W., 100 Hetem, R.S., 379 Hidaka, M., 240 Hidalgo, M.C., 314 Hirono, I., 66, 440 Hu, R.-B., 214 Huang, C.-L., 544 Hulme, K., 407 Hummel, J., 398 Hwang, L-Y., 544 Hwang, P.-P., 544 Hyndman, K.A., 58

Iftikar, F.I., 149 Ikegami, T., 219 Intanai, I., 372 Ip, Y.K., 149 Isomura, N., 240 Iwata, M., 293

Janssen, C.R., 53 Jeanniard du Dot, T., 524 Jensen, F.B., 351 Ji, X., 214 Jutfelt, F., 552

Kalamarz, H., 486 Katersky, R.S., 513 Kerley, G.I.H., 379 Kim, M., 207 Kinsey, S.T., 478 Kirtikara, K., 535 Kiss, A.C.I., 182 Kitaysky, A.S., 524 Klinbunga, S., 66, 535 Kluge, J.A., 46 Koke, J.R., 135 Kortner, T.M., 304 Korzan, W.J., 569 Kraffe, E., 599 Kremberg, T., 176 Kucio, T.A., 334 Kulczykowska, E., 486 Kuo, A.Y., 130

La Spada, G., 418 Laverty, G., 357 Le Floc'h, N., 491 Le Goïc, N., 234 Lee, C.-Y., 139 Lee, L.E.J., 245 Lee, T.-H., 544 Lee Jr., R.E., 518 Leelatanawit, R., 66 Lejart, M., 234 Leone, F.A., 431 Li, Z., 498 Lillywhite, H.B., 389

Author Index

Lin, C.-H., 544 Lin, Y.-S., 579 Lindsay, C., 593 Lopez-Martinez, G., 518 López-Olmeda, J.F., 168, 486 Lu, H.-L., 214 Lubjuhn, T., 176 Lurman, G.J., 423

Macedo, M.L.R., 255 Maitra, S.K., 327 Majewski, P., 299 Maldonado, K., 322 Maloney, S.K., 379 Mañanós, E., 168 Marino, A., 418 Markowska, M., 299 Martin, N., 599 Martinez, A.-S., 189 Maruska, K.P., 569 Masello, J.F., 176 Masero, J.A., 565 Masui, D.C., 431 Mathieu, M., 189 Matthee, A., 334 McBride, K., 123 McCall, R.D., 478 McNab, B.K., 22, 341 McNamara, J.C., 431 Medler, S., 407 Meistertzheim, A.-L., 234 Menasveta, P., 66 Mensinger, A.F., 569 Metcalf, V., 123 Meyer, L.C.R., 379 Miller, E.H., 341 Mitchell, D., 334, 379 Mitchell, L.M., 100 Mommsen, T.P., 292 Montgomerie, R., 123 Morabito, R., 418 Morales, A.E., 314 Morley, S.A., 423 Mrac, A., 189 Mujahid, A., 604 Mulvey, J.M., 273 Muñoz-Cueto, J.A., 245 Murray, J.A., 83 Muyssen, B.T.A., 53 Mykles, D.L., 470

Naimi, A., 189 Nakamura, M., 219 Nakatsuji, T., 139 Nandar, W., 130 Navas, C.A., 182 Nikaido, Y., 77 Nilsson, G.E., 292 Nishikawa, R., 245 Novak, I., 351 Nygren, K., 398

Ochoa-Acuña, H.G., 341 Oftedal, O.T., 158 Ojima, D., 293 Ojimi, M.C., 240 Oliveira, C., 168, 486 Olsen, R.-E., 552 Olson, K.R., 389 Ortmann, S., 504 Overton, J.D., 478

Page, M.M., 115 Park, H., 207 Parra, J.R.P., 255 Patel, M., 149 Pawlak, J., 299 Peck, L.S., 423 Pérez-Jiménez, A., 314 Peters, C.W., 115 Pirozzi, I., 586 Pongsomboon, S., 225 Pörtner, H.-O., 423 Prall, B.C., 130

Quillfeldt, P., 176 Quintana, F., 197

Ramos, J., 168 Rankin, S.M., 83 Rasmussen, J.R., 162 Reed, J.M., 46 Reed, W.L., 262 Renshaw, G.M.C., 273 Richmond, J.P., 524 Rocha, E., 304 Rojas, J.M., 560 Romero, L.M., 46 Rosen, D.A.S., 524 Rosengrave, P., 123 Roytrakul, S., 66

Sabat, P., 322 Saito, T., 158 Sánchez-Guzmán, J.M., 565 Sánchez-Vázquez, F.J., 168, 486 Santiago-Quesada, F., 565 Schuler, A.M., 83 Schwarm, A., 504 Senda, A., 158 Serrão Santos, R., 278 Servili, A., 245 Seth, M., 327 Sève, B., 491 Shepard, E.L.C., 197 Siegel, P.B., 130 Sittikankeaw, K., 66 Skadhauge, E., 357

Skepper, J.N., 423 Skwarlo-Sonta, K., 299 Smith. M.L., 130 Smith, R.W., 149 Soderholm, L.V., 100 Sotherland, P.R., 262 Sourdaine, P., 189 Specker, J.L., 268 Specq, M.-L., 189 Staples, I.F., 115 St-Cyr, S., 9 Streich, W.J., 504 Stuart, J.A., 115 Südekum, K.-H., 398 Sundell, K.S., 552 Suzuki, N., 219

Takahashi, S., 158
Takemura, A., 77
Tassanakajon, A., 225
Taylor, E.W., 372
Taylor, H., 123
TeBrugge, V.A., 83
Thébault, M.-T., 234
Tobe, S.S., 83
Trites, A.W., 524
Tsai, I.-H., 579
Tsai, T.-S., 579
Tu, M.-C., 579

Udomlertpreecha, S., 225 Ueda, S., 77 Uemura, Y., 158 Urashima, T., 158

van Griethuijsen, L.I., 46 Vásquez, R.A., 560 Veillette, P.A., 268 Vera, L.M., 168 Villegas, A., 565 Visudtiphole, V., 535

Walsh, P.J., 292 Wang, P.-J., 544 Watson, R.D., 139 Wells, R.M.G., 162 Whiteley, N.M., 372 Wilkinson, J., 46 Wilson, R.P., 197 Wolf, C., 504 Wood, C.M., 149 Woolfson, J.P., 91 Wuthisuthimethavee, S., 225

Yang, J., 498 Yang, X., 498 Yocawibun, P., 66

Zhao, B., 498 Zinn, S.A., 524

